

## MEMORANDUM

SUBJECT: Draft BERA for the Gulfco Site

FROM: Susan Roddy

TO: Gary Miller

DATE: February 16, 2011

I have reviewed the draft BERA for the Gulfco site, and have the following comments:

1. The Executive Summary should mention that there were no food chain risks found (based on an earlier document, i.e., SLERA).
2. Page 11, Point 2 and page 26, Section 3.3.4. It should read wetlands and pond surface water.
3. Page 12, point 3: A reference citation from US Fish and Wildlife Service should be provided for the finding of no threatened and endangered species.
4. Page 18, first complete paragraph, last sentence, and Section 3.3, first paragraph, fourth sentence: In the first paragraph, reference samples are described as those that exhibit similar environmental conditions, except for the presence of Site-related COPECs. In the first paragraph under Section 3.3, reference location concentration exceedances of COPECs are mentioned. Clarification is needed in the first paragraph under Section 3.3 to indicate that reference samples are not containing site-related COPECs. This relates also to the sentence on page 29, Section 4, the paragraph under the Points, the last sentence in the paragraph.
5. Page 20, Analytical Chemistry Results, fourth sentence: The words "EPA's requested comparison with" should be removed.
6. Page 22, last paragraph, second sentence: Specific clarification should be included for the SEM/AVS ratios for the site regarding that an expectation of potential bioavailability (i.e., except for EWSED08) is indicated due to SEM/AVS ratios exceeding (as worded on Table 8); there should be analogous consistency on page 30 (mentioning an exception of EWSED08). And, on page 30, Section 4.2, first paragraph, a sentence should be added to mention the finding for SEM/AVS ratios as related to potential bioavailability in addition to the finding about excess SEM/foc indicating low bioavailability. Discussion is needed integrating these contrasting findings.
7. Page 31, first complete paragraph, second sentence: Since there was a finding from the MLR statistical analysis of associations that there was a significant negative association (indicating a potential effect) for zinc in the wetland sediment for *Leptocheirus plumulosus*, clarification is needed regarding any implications (see also Sections 6 and 7).
8. Page 31, bottom of the page, continuing onto page 32: At the bottom of page 31, the words "As previously mentioned" should be removed, the words "site COPEC concentrations" should be

replaced with the words “any one physical and/or chemical parameter” and, on the next page, the word “metals” should be replaced with “contaminants either inorganic or anthropogenic organic”.

9. Table 1: For the Measures of Effects column, one row identifies specifically the contaminants, but the other 2 rows do not; consistency is needed with the first row.
10. Table 1: Given that fish are listed in Table 1, and the measure of effect for fish is exceedance of surface water benchmarks, there needs to be a footnote using the language in the last sentence on the bottom of page 32 (Section 4.4).
11. Page 32, Section 4.4: It should be clarified in the paragraph at the bottom of the page that the surface water was for the wetland area.
12. Page 33, bottom of the page: Why would a compound be called a COPEC (which seems to imply site-related contaminant) if it appears at reference locations especially given that previously in the document (page 18), it was stated that the difference between a reference and site sample location was that there were no site-related COPECs at the reference location? Further consistency in terminology and clarification (to clarify that for a reference location any contaminants measured are not site-related) are needed in the document. See top of page 35 as well as page 29.
13. Page 34, Section 5.1.3, first paragraph, last sentence: Clarification is needed of parameters considered for the statement made that the site and reference areas are similar in physical-chemical characteristics for both the soil and sediment areas.
14. Page 39, Section 5.3.3: A potential explanation should be provided for why *Artemia* testing failure (of controls) occurs at 96 hours, but not 48 hours nor 24 hours. *Artemia* was selected because of salinity tolerance and hardiness to harsh conditions, so it is unclear what is meant regarding fragility of the test organism.
15. Page 40, Section 5.3.4, second paragraph: Explanations should be provided for why sublethal and lethal effects caused by physical parameters of the sediment samples would likely be less evident in the shorter test.
16. Regarding the last sentence of this same paragraph, clarification in this paragraph should be provided for Gulfco regarding whether it was the case that the outcome of a shorter-duration test was higher survival percentages and dry weight values among the replicates for both site samples and reference location samples.
17. Page 40, Section 5.3.4, third and fourth paragraphs: Further clarification is needed regarding applicability to the Gulfco site.
18. Table 1: For the Measures of Exposure column, one row specifically identifies the contaminants, but the other rows do not; there should be consistency with the first row in specifically identifying the contaminants.
19. Table 1 and the text regarding the assessment endpoint for fish: Page 27 should clearly address the endpoint for fish in the discussion of exceedances of surface water benchmarks as related to whether there is habitat for fish in the wetland and pond (intermittent) surface water (as is done at the bottom of page 32). And, to be consistent with the formatting of the other sections the headings (Ecological Setting, Analytical Chemistry Results, and Toxicity Results) on page 27 should be bolded.